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Research Article

Fig Juice Fermented with Lactic Acid Bacteria as a Nutraceutical Product

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ABSTRACT

Background: Probiotics are live microorganisms bringing useful effects to the host through balancing intestine microbiota. This research was undertaken to determine the suitability of fig juice as raw material for production of probiotic juice by three species of lactic acid bacteria *(Lactobacillus casei*, *Lactobacillus plantarum* and *Lactobacillus delbrueckii).*

Methods: Heat treated fig juices were inoculated (6 log CFU/ml) by three species inocula separately and incubated at 30 °C for 72 h. Changes in the pH, acidity, reducing sugar content and viable cell counts during the fermentation were monitored. Sensory characteristics of probiotic fig juice were also evaluated.

Results: *L. delbrueckii* grew well on fig juice; reached nearly 9 log CFU/ml after 48 h of fermentation at 30 °C. After 4 weeks of cold storage at 4 °C, the viable cell counts of *L. delbrueckii and L. plantarum* were still 6 and 5 log CFU/ml, respectively, in fermented fig juice; but *L. casei* was just survived until 2th week of cold storage time, reduced from 9 to 3 log CFU/ml. The results of the sensory evaluation showed that fermented fig juice samples were significantly different ($P<0.05$) from the control sample in taste, odor, consistency and overall acceptability. *L. casei* was more acceptable comparing to the others.

Conclusion: *L. delbrueckii* was the most suitable strain from the point of survivability among other species at the consumption time. Therefore, probiotic fig juice can serve as healthy beverage for vegetarians and consumers with lactose-allergy.